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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/573,767	03/29/2006	Martin Hagg	E7900.2063/P2063	9921

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EXAMINER	
HAMO, PATRICK	

ART UNIT	PAPER NUMBER
3746	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/573,767	HAGG ET AL.	
	Examiner	Art Unit	
	PATRICK HAMO	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 August 2010*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,8,10,11,14-17,19-21,23,25,27,28,30,32 and 34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4,8,10,11,14-17,19-21,23,25,27,28,30,32 and 34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *9/23/10*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 25, 2010 has been entered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-4, 8, 10, 11, 15, 19-21, 23, 25, 27, 28, 30 and 32 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitations "said suction cycle" and “said output cycle” in lines 15-16 of the claim (“said suction cycle is shorter than said output cycle"). Two suction cycles and two output cycles are positively recited, one each for each of first and second pumps positively recited in independent claim 1. It is unclear if these limitations refer to the suction and output cycles of one or both of the pumps. If they are directed to the cycles of just one of the pumps, it is unclear which one.

Claim 2 recites the limitation "that the suction and output cycles of said pumps overlap one another” in the final two lines of the claim. This limitation is ambiguous as it

is unclear if the suction cycles of each of said three pumps positively recited in independent claim 2 are meant to overlap, and the output cycles of each of said three pumps are similarly meant to overlap, or if the suction cycle of one or more of the pumps is meant to overlap with the output cycle of one or more of the remaining pumps. Claims 19 and 27 recite a similar limitation and are similarly rejected.

Claim 3 recites the limitations “a first pump” and “a second pump” in line 2 of the claim. Claim 3 depends from claim 1, which positively recites "first and second pumps." It is unclear if these newly recited pumps are the same or different from the pumps recited in claim 1.

Claim 3 further recites the limitation that “the suction cycle in the first pump is shorter than the output cycle in the second pump and conversely." It is unclear what is meant by conversely as the converse of the stated limitation is open to interpretation. It may be interpreted as either the output cycle in the first pump is shorter than the suction cycle in the second pump, the suction cycle in the second pump is shorter than the output cycle in the first pump, or the output cycle in the first pump is longer than the suction cycle in the second pump. Claim 15 recites a similar limitation and is similarly rejected.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-4, 8, 10, 11, 14-17, 19-21, 23, 25, 27, 28, 30, 32 and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Atkinson, US 4,635,621, in view of Rosenburgh, US 5,339,131.

In regard to claim 1:

Atkinson discloses a surgical fluid pump system for transporting a sterile fluid from a source 15 to a surgical instrument 27, the system comprising a drive system 53a, a pump system 51 comprising an inlet 19 for establishing a fluid connection the source and an outlet 23 for connection to the instrument, a pump 51a having a piston 179 that contacts the fluid having a suction cycle and an output cycle (see fig. 5), conduit 19, 23 and valve 174a, 176a devices for providing the fluid path, the pump releasably coupled to the motor at pin 61.

Atkinson does not disclose that the motor drives the system in such a way that a suction cycle is shorter than an output cycle and that fluid is supplied with substantially constant pressure, nor does Atkinson disclose multiple pumps. However, Rosenburgh teaches a processing apparatus for photographic materials that includes a stepper motor 259 driving bellows pumps 275-277, the stepper motor being operated at a variable rotational speed such that the time for filling of the bellows, or a suction cycle, is minimized and the time for discharge, or an output cycle, is maximized, providing a smooth constant pressure delivery of solution (col. 3, lines 56-62). It would have been obvious to a person having ordinary skill in the art to have modified the pumping system of Atkinson with the teaching of Rosenburgh allowing for variable rate control to produce

a smooth constant pressure delivery as the application of a known technique (variable rate control to produce constant pressure output) to a known device (the motor/pump system of Atkinson) to achieve the predictable result of providing a constant pressure fluid output.

In regard to claim 2:

Atkinson discloses a surgical fluid pump system for transporting a sterile fluid from a source 15 to a surgical instrument 27, the system comprising a drive system 53a, a disposable pump system 51 comprising an inlet 19 for establishing a fluid connection the source and an outlet 23 for connection to the instrument, and having a piston 179 that contacts the fluid, the pump releasably coupled to the motor at pin 61. Atkinson does not disclose that the pump system comprises three pumps, each having a piston that contacts the fluid with input and output cycles, the drive system driving the system such that the suction and output cycles of the three pumps overlap one another.

However, Rosenburgh teaches a processing apparatus for photographic materials that includes a stepper motor 259 driving bellows pumps 275-277, the stepper motor being operated at a variable rotational speed such that the time for filling of the bellows, or a suction cycle, is minimized and the time for discharge, or an output cycle, is maximized, providing a smooth constant pressure delivery of solution (col. 3, lines 56-62). In fig. 2, based on the different positions of each pump along the cam shaft 278, it is apparent that the suction and output cycles overlap, as is evidences by the con rods 279-281 being disclosed as out of phase with each other (col. 6, lines 20-22). It would have been obvious to a person having ordinary skill in the art to have modified the

motor of Atkinson with the stepper motor of Rosenburgh allowing for variable rate control to produce a smooth constant pressure delivery as the application of a known technique (variable rate control to produce constant pressure output) to a known device (the motor/pump system of Atkinson) to achieve the predictable result of providing a constant pressure fluid output. Note that each bellows has separate inlets and outlets and that, in combination, it would have been obvious to use the piston of Atkinson for all three pumps as one of a finite number of pumping means taught with a reasonable expectation of success, and that the conduit 19, 23 and valve 174a, 176a devices for providing the fluid path of Atkinson in conjunction with the lines 247 and 249 of Rosenburgh would still be necessary for fluid transfer.

In regard to claim 3:

Rosenburgh further teaches that the system comprises first 275 and second 276 pumps that are both operated to have longer suction cycles than output cycles. Because the total cycle time of both pumps is dependent on the same motor, it then stands to reason that the suction cycle of the first pump is shorter than the output cycle of the second pump and vice versa.

In regard to claim 4:

Because of the staggered positions of the pumps of Rosenburgh (see fig. 2), the output cycles will have some overlap.

In regard to claim 8:

The controllable rotary stepper motor 259 of Rosenburgh drives each of the pistons 279-281.

In regard to claim 10:

Because of the staggered positions of the pumps of Rosenburgh (see fig. 2), the output cycles will have some overlap.

In regard to claim 11:

Rosenburgh's pump system provides substantially constant pressure, as discussed above.

In regard to claim 14:

Atkinson discloses a surgical fluid pump system for transporting a sterile fluid from a source 15 to a surgical instrument 27, the system comprising a drive system 53a, a disposable pump system 51 comprising an inlet 19 for establishing a fluid connection the source and an outlet 23 for connection to the instrument, and having a piston 179 that contacts the fluid, the pump releasably coupled to the motor at pin 61. Atkinson does not disclose that the pump system comprises first and second pumps, each having a piston that contacts the fluid with input and output cycles, the drive system driving the system such that the suction and output cycles of the three pumps overlap one another.

However, Rosenburgh teaches a processing apparatus for photographic materials that includes a stepper motor 259 driving bellows pumps 275-277, the stepper motor being operated at a variable rotational speed such that the time for filling of the bellows, or a suction cycle, is minimized and the time for discharge, or an output cycle, is maximized, providing a smooth constant pressure delivery of solution (col. 3, lines 56-62). In fig. 2, based on the different positions of each pump along the cam shaft 278, it is apparent that the suction and output cycles overlap, as is evidences by the con rods

279-281 being disclosed as out of phase with each other (col. 6, lines 20-22). It would have been obvious to a person having ordinary skill in the art to have modified the pumping system of Atkinson with the teaching of Rosenburgh allowing for variable rate control to produce a smooth constant pressure delivery as the application of a known technique (variable rate control to produce constant pressure output) to a known device (the motor/pump system of Atkinson) to achieve the predictable result of providing a constant pressure fluid output. Note that each bellows has separate inlets and outlets and that, in combination, it would have been obvious to use the piston of Atkinson for first and second pumps as one of a finite number of pumping means taught with a reasonable expectation of success, and that the conduit 19, 23 and valve 174a, 176a devices for providing the fluid path of Atkinson in conjunction with the lines 247 and 249 of Rosenburgh would still be necessary for fluid transfer.

In regard to claim 15:

Rosenburgh further teaches that the system comprises first 275 and second 276 pumps that are both operated to have longer suction cycles than output cycles. Because the total cycle time of both pumps is dependent on the same motor, it then stands to reason that the suction cycle of the first pump is shorter than the output cycle of the second pump and vice versa.

In regard to claim 16:

Rosenburgh's pump system provides substantially constant pressure, as discussed above.

In regard to claim 17:

The controllable rotary stepper motor 259 of Rosenburgh drives each of the pistons 279-281.

In regard to claim 19:

Atkinson discloses a surgical fluid pump system for transporting a sterile fluid from a source 15 to a surgical instrument 27, the system comprising a drive system 53a, a pump system 51 comprising an inlet 19 for establishing a fluid connection the source and an outlet 23 for connection to the instrument, a pump 51a having a piston 179 that contacts the fluid having a suction cycle and an output cycle (see fig. 5), conduit 19, 23 and valve 174a, 176a devices for providing the fluid path, the pump releasably coupled to the motor at pin 61. Atkinson does not disclose that the motor drives the system in such a way that a suction cycle is shorter than an output cycle.

However, Rosenburgh teaches a processing apparatus for photographic materials that includes a stepper motor 259 driving bellows pumps 275-277, the stepper motor being operated at a variable rotational speed such that the time for filling of the bellows, or a suction cycle, is minimized and the time for discharge, or an output cycle, is maximized, providing a smooth constant pressure delivery of solution (col. 3, lines 56-62). It would have been obvious to a person having ordinary skill in the art to have modified the motor of Atkinson with the stepper motor of Rosenburgh allowing for variable rate control to produce a smooth constant pressure delivery as the application of a known technique (variable rate control to produce constant pressure output) to a known device (the motor/pump system of Atkinson) to achieve the predictable result of providing a constant pressure fluid output.

In regard to claim 20:

Because of the staggered positions of the pumps of Rosenburgh (see fig. 2), the output cycles will have some overlap.

In regard to claim 21:

Rosenburgh's pump system provides substantially constant pressure, as discussed above.

In regard to claim 23:

Atkinson discloses that the pump is a disposable unit.

In regard to claim 25:

The controllable rotary stepper motor 259 of Rosenburgh drives each of the pistons 279-281.

In regard to claim 27:

Atkinson discloses a surgical fluid pump system for transporting a sterile fluid from a source 15 to a surgical instrument 27, the system comprising a drive system 53a, a disposable pump system 51 comprising an inlet 19 for establishing a fluid connection the source and an outlet 23 for connection to the instrument, and having a piston 179 that contacts the fluid, the pump releasably coupled to the motor at pin 61. Atkinson does not disclose that the pump system comprises at least three pumps, each having a piston that contacts the fluid with input and output cycles, the drive system driving the system such that the suction and output cycles of the three pumps overlap one another.

However, Rosenburgh teaches a processing apparatus for photographic materials that includes a stepper motor 259 driving bellows pumps 275-277, the stepper

motor being operated at a variable rotational speed such that the time for filling of the bellows, or a suction cycle, is minimized and the time for discharge, or an output cycle, is maximized, providing a smooth constant pressure delivery of solution (col. 3, lines 56-62). In fig. 2, based on the different positions of each pump along the cam shaft 278, it is apparent that the suction and output cycles overlap, as is evidences by the con rods 279-281 being disclosed as out of phase with each other (col. 6, lines 20-22). It would have been obvious to a person having ordinary skill in the art to have modified the motor of Atkinson with the stepper motor of Rosenburgh allowing for variable rate control to produce a smooth constant pressure delivery as the application of a known technique (variable rate control to produce constant pressure output) to a known device (the motor/pump system of Atkinson) to achieve the predictable result of providing a constant pressure fluid output. Note that each bellows has separate inlets and outlets and that, in combination, it would have been obvious to use the piston of Atkinson for first and second pumps as one of a finite number of pumping means taught with a reasonable expectation of success, and that the conduit 19, 23 and valve 174a, 176a devices for providing the fluid path of Atkinson in conjunction with the lines 247 and 249 of Rosenburgh would still be necessary for fluid transfer.

In regard to claim 28:

Rosenburgh's pump system provides substantially constant pressure, as discussed above.

In regard to claim 30:

Atkinson discloses that the pump is a disposable unit.

In regard to claim 32:

The controllable rotary stepper motor 259 of Rosenburgh drives each of the pistons 279-281.

In regard to claim 34:

Atkinson discloses a surgical fluid pump system for transporting a sterile fluid from a source 15 to a surgical instrument 27, the system comprising an inlet 19 for establishing a fluid connection the source and an outlet 23 for connection to the instrument, having a piston 179 that contacts the fluid and applies pressure to the fluid, conduit 19, 23 and valve devices 174a, 176a, providing a fluid path between the inlet, the pump, and the outlet, valve device 174a prohibiting an outflow of fluid at the inlet and 176a prohibiting an inflow at the outlet. Atkinson does not disclose that the pump system comprises a plurality of pumps, each having a piston that contacts the fluid, and a portion of the fluid path from an inlet to a pump is common to a portion of the fluid path from a pump to the an outlet.

However, Rosenburgh teaches a processing apparatus for photographic materials that includes a stepper motor 259 driving bellows pumps 275-277, the stepper motor being operated at a variable rotational speed such that the time for filling of the bellows, or a suction cycle, is minimized and the time for discharge, or an output cycle, is maximized, providing a smooth constant pressure delivery of solution (col. 3, lines 56-62). In fig. 2, based on the different positions of each pump along the cam shaft 278, it is apparent that the suction and output cycles overlap, as is evidences by the con rods 279-281 being disclosed as out of phase with each other (col. 6, lines 20-22). It would

have been obvious to a person having ordinary skill in the art to have modified the pumping system of Atkinson with the teaching of Rosenburgh allowing for variable rate control to produce a smooth constant pressure delivery as the application of a known technique (variable rate control to produce constant pressure output) to a known device (the motor/pump system of Atkinson) to achieve the predictable result of providing a constant pressure fluid output. Note that each bellows has separate inlets and outlets and that, in combination, it would have been obvious to use the piston of Atkinson for first and second pumps as one of a finite number of pumping means taught with a reasonable expectation of success, and that the conduit 19, 23 and valve 174a, 176a devices for providing the fluid path of Atkinson in conjunction with the lines 247 and 249 of Rosenburgh that are common to all pumps would still be necessary for fluid transfer. In regard to the limitation that a portion of said sterile fluid path from said inlet to a respective one of said pumps is common to a portion of said sterile fluid path from said respective one of said pumps to said outlet, with the use of the one-way valves of Atkinson, it would have been obvious to a person having ordinary skill in the art that this constitutes a mere rearrangement of parts (the conduits and inlets and outlets being the parts) that is no more than an engineering design choice, and therefore does not patentably distinguish over the art of record absent an unexpected result.

Response to Arguments

Applicant's arguments filed August 25, 2010 have been fully considered but they are not persuasive.

In response to applicant's argument that Rosenburgh is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, Rosenburgh is concerned with the constant pressure output of a pumping system, which is at least one of the problems with which the applicant is concerned.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

In regard to applicant's arguments that Rosenburgh does not explicitly teach that the output cycles of the bellows overlap, examiner first asserts that an explicit teaching is not required if one of ordinary skill in the art may infer a teaching under an obviousness rejection. Regardless, with the disclosure that the three bellows are out of phase with each other at 120 degrees each and each bellows having the same TDC and BDC, it is inherent or at least implied that the output cycles will overlap, as

discussed in the rejection above. Furthermore, as the suction cycles of each bellows is minimized, it is similarly implied that the suction cycle of a first pump is shorter than the output cycle of a second pump, and vice versa.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PATRICK HAMO whose telephone number is (571)272-3492. The examiner can normally be reached on M-F 8:30-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on 571-272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/
Supervisory Patent Examiner, Art Unit 3746

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Patent Examiner, AU 3746